

BPE, Pharmaceutical Fitting



CSE HIGH PURITY TUBE & FITTING VALVE (ASME BPE STANDARD)

Pharmaceutical/Biotechnology fitting. CSE have over 15 years hygienic fitting experiences for developing out the ASME bioprocessing equipment (BPE) standard tube, fitting, valve components for high purity application such as water for injection, pharmaceutical, cosmetics use. Material : low sulphur ASTM SS316L, S : $\leq 0.005\% \sim 0.017\%$,



MTR certificate will be offered.
Surface options:

Ra Reading for Tubing					
As drawing and / or mechanically polished			Mechanically Polished and Electropolished or Electropolished		
Surface Designation	Ra Average		Surface Designation	Ra Average	
	$\mu\text{-in}$	$\mu\text{-m}$		$\mu\text{-in}$	$\mu\text{-m}$
SF1	20	0.5	SF3	10	0.375
SF2	25	0.63	SF4	15	0.5
SF3	30	0.76	SF4	15	0.5

Ra Reading for Fitting					
Mechanically polished			Mechanically Polished and Electropolished		
Surface Designation	Ra Average		Surface Designation	Ra Average	
	$\mu\text{-in}$	$\mu\text{-m}$		$\mu\text{-in}$	$\mu\text{-m}$
SF1	20	0.5	SF4	15	0.38
SF2	25	0.63	SF5	20	0.5
SF3	30	0.76	SF6	25	0.63

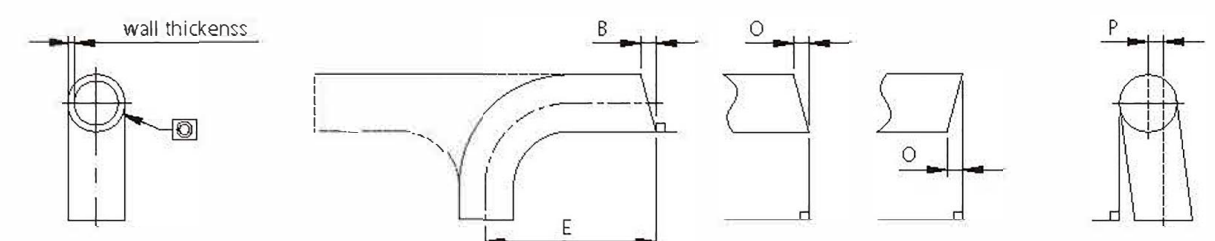
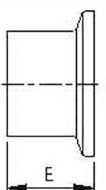
Outer surface: Tubes and fittings Ra \leq 32 μin (0.8 μm)

Dimension & tolerance :

SIZE	OD	Wall thickness		Squareness face To tangent \times B	Off angle O	Off plane P
		Mechanical polish	Electropolish			
1/2"	± 0.13	+0.13/-0.2	+0.13/-0.25	0.13	0.36	0.76
3/4"	± 0.13	+0.13/-0.2	+0.13/-0.25	0.13	0.46	0.76
1.0"	± 0.13	+0.13/-0.2	+0.13/-0.25	0.2	0.64	0.76
1.5"	± 0.2	+0.13/-0.2	+0.13/-0.25	0.2	0.86	1.27
2.0"	± 0.2	+0.13/-0.2	+0.13/-0.25	0.2	1.09	1.27
2.5"	± 0.25	+0.13/-0.2	+0.13/-0.25	0.25	1.37	1.27
3.0"	± 0.25	+0.13/-0.2	+0.13/-0.25	0.41	1.73	1.27
4.0"	± 0.38	+0.2/-0.25	+0.2/-0.30	0.41	2.18	1.52

General Notes :

Tolerance on E end-to-end and center-to-end : 1.27mm
Tolerance for centerline radius (CLR) is $\pm 10\%$ of the nominal dimension.



BPE Stainless Steel Tubing

Absolutely hygienic conditions are necessary for the entire production cycle of pharmaceutical and ultra-high industries. Therefore, tubes, fittings, and valves with a smooth internal surface are extensively installed with the advantages of cleaning easily and avoiding bacteria contamination.

CSE only offers tubes that are manufactured, quality controlled, marked, and certified according to the highest standards for hygienic equipment design and guarantees extended quality and traceability. CSE BPE tubing significantly reduces inspection requirements prior to installation by utilizing only the highest quality stainless steel materials.

CSE delivers directly from stock the following stainless steel tubes in grade TP316L with low sulfur content of 0.005% to 0.0017% and SF1 and SF4 finishes (according to the ASME BPE specification)



STANDARDS:

ASTM A270-2015 S2

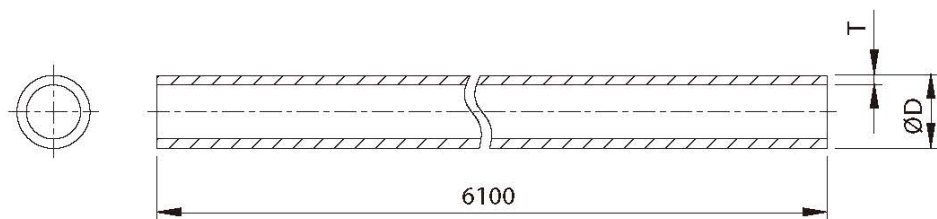
SURFACE FINISH: SF0~SF6

SF1 ID Pol. Ra<0.5μm/ OD Pol. Ra<0.8μm

SF4 ID EP Finished Ra<0.38μm/ OD Pol. Ra<0.8μm

CSE BPE EP products with following advantages:

- Homogeneously EP layer to minimize rouging
- Higher chrome concentration for better corrosion resistance
- Guaranteed smoothness of all internal surfaces to reduce Bio film



SIZE	1/8"	1/4"	3/8"	1/2"	3/4"	1.0"	1.5"	2.0"	2.5"	3.0"	4.0"	6.0"
ØD	3.18	6.35	9.53	12.7	19.05	25.4	38.1	50.8	63.5	76.2	101.6	152.4
T	0.56	0.89	0.89	1.65	1.65	1.65	1.65	1.65	1.65	1.65	2.11	2.77

Marking:



ASME BPE (BPE REFERENCE NO.)
TP316L size SFX
(H.T.NO.)



ASTM A270 TP316L ASME-BPE DT-4-1 SF-X WLD NDE Size X length X Heat NO X

Package Type:

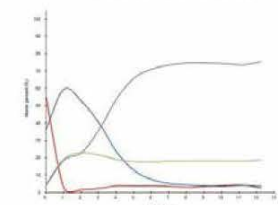
SF1

SF4



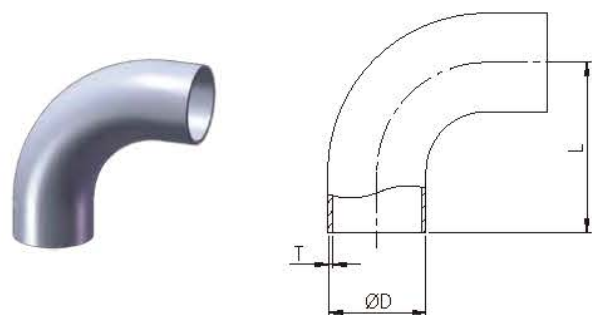
Survey	O1s	Cr2p3	Fe2p3	Ni2p3	Mo3d	Cr : Fe
1.5" TEE 1810D (sputter 1.5nm)	56.28	19.74	19.02	3.94	1.02	1.04 : 1

1.5" TEE 1810D Depth profile



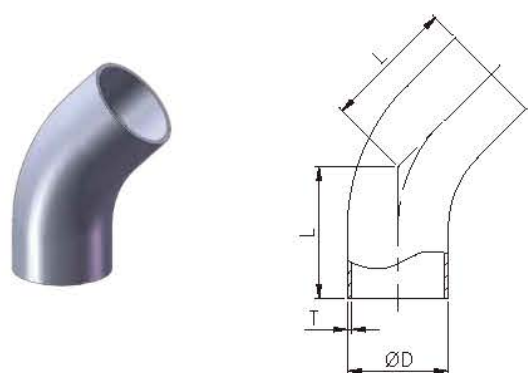
Note: "—" is shown the value under detection limit of XPS analysis.

BPE Fittings



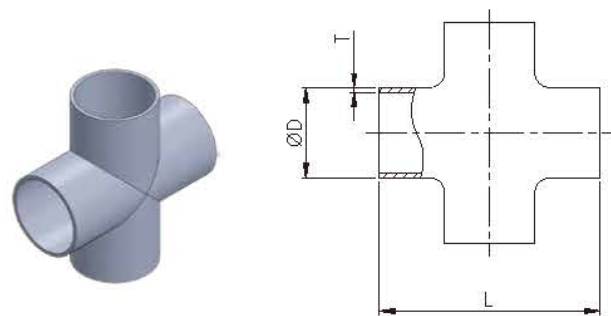
DT-4.1.1-1 LONG WELD 90° ELBOW (DT-7)

SIZE	ØD	L	T
1/2"	12.7	76.2	1.65
3/4"	19.05	76.2	1.65
1"	25.4	76.2	1.65
1.5"	38.1	95.25	1.65
2"	50.8	120.65	1.65
2.5"	63.5	139.7	1.65
3"	76.2	158.75	1.65
4"	101.6	203.2	2.11
6"	152.4	292.1	2.77



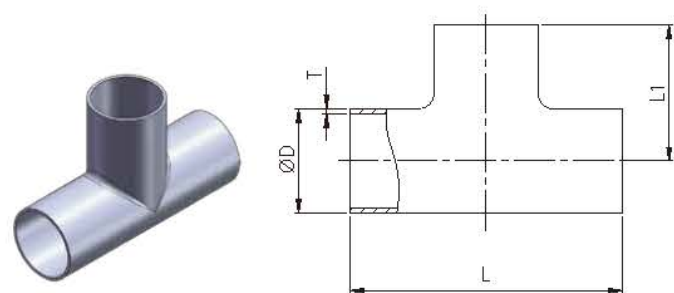
DT-4.1.1-4 LONG 45° ELBOW (DT-8)

SIZE	ØD	L	T
1/2"	12.7	57.15	1.65
3/4"	19.05	57.15	1.65
1"	25.4	57.15	1.65
1.5"	38.1	63.5	1.65
2"	50.8	76.2	1.65
2.5"	63.5	85.73	1.65
3"	76.2	92.08	1.65
4"	101.6	114.3	2.11
6"	152.4	158.75	2.77



DT-4.1.2-1C CROSS (DT-9)

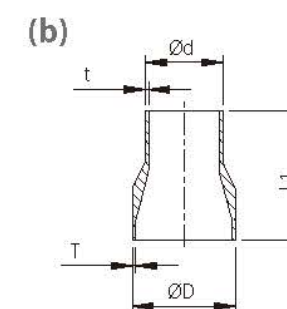
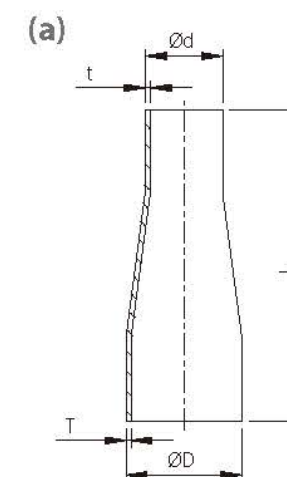
SIZE	ØD	L	T
1/2"	12.7	95.26	1.65
3/4"	19.05	101.6	1.65
1"	25.4	107.96	1.65
1.5"	38.1	120.66	1.65
2"	50.8	146.06	1.65
2.5"	63.5	158.76	1.65
3"	76.2	171.46	1.65
4"	101.6	209.56	2.11
6"	152.4	285.76	2.77



DT-4.1.2-1T TEE (DT-9)

SIZE	ØD	L	L1	T
1/2"	12.7	95.26	47.63	1.65
3/4"	19.05	101.6	50.8	1.65
1"	25.4	107.96	53.98	1.65
1.5"	38.1	120.66	60.33	1.65
2"	50.8	146.06	73.03	1.65
2.5"	63.5	158.76	79.38	1.65
3"	76.2	171.46	85.73	1.65
4"	101.6	209.56	104.78	2.11
6"	152.4	285.76	142.88	2.77

BPE Fittings



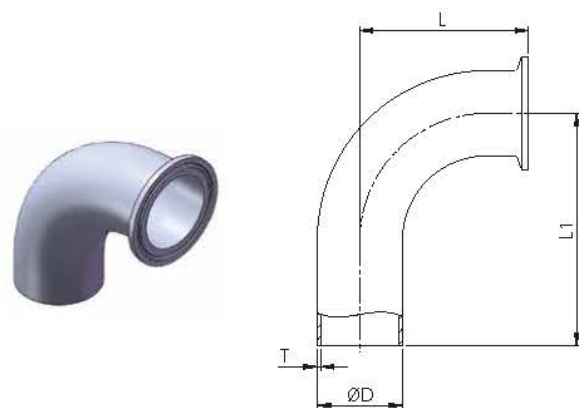
DT-4.1.3-1 CONCENTRIC REDUCER (DT11)

SIZE	ØD	Ød	L	L1	T	t
3/4"×1/2"	19.05	12.7	101.6	53.93	1.65	1.65
1.0"×1/2"	25.4	12.7	114.3	63.5	1.65	1.65
1.0"×3/4"	25.4	19.05	101.6	53.93	1.65	1.65
1.5"×1/2"	38.1	12.7	139.7	76.2	1.65	1.65
1.5"×3/4"	38.1	19.05	127	76.2	1.65	1.65
1.5"×1.0"	38.1	25.4	127	63.5	1.65	1.65
2.0"×1/2"	50.8	12.7	196.9	85.73	1.65	1.65
2.0"×3/4"	50.8	19.05	184.2	85.73	1.65	1.65
2.0"×1.0"	50.8	25.4	184.2	85.73	1.65	1.65
2.0"×1.5"	50.8	38.1	133.4	63.5	1.65	1.65
2.5"×1/2"	63.5	12.7	247.7	—	1.65	1.65
2.5"×3/4"	63.5	19.05	235	—	1.65	1.65
2.5"×1.0"	63.5	25.4	235	85.73	1.65	1.65
2.5"×1.5"	63.5	38.1	184.2	85.73	1.65	1.65
2.5"×2.0"	63.5	50.8	139.7	63.5	1.65	1.65
3.0"×1.0"	76.2	25.4	285.8	107.95	1.65	1.65
3.0"×1.5"	76.2	38.1	235	107.95	1.65	1.65
3.0"×2.0"	76.2	50.8	190.5	85.73	1.65	1.65
3.0"×2.5"	76.2	63.5	139.7	66.68	1.65	1.65
4.0"×1.0"	101.6	25.4	393.7	—	2.11	1.65
4.0"×1.5"	101.6	38.1	342.9	—	2.11	1.65
4.0"×2.0"	101.6	50.8	298.5	130.18	2.11	1.65
4.0"×2.5"	101.6	63.5	247.7	107.95	2.11	1.65
4.0"×3.0"	101.6	76.2	196.9	98.43	2.11	1.65
6.0"×3.0"	152.4	76.2	—	184.15	2.77	1.65
6.0"×4.0"	152.4	101.6	254	142.88	2.77	2.11

DT-4.1.3-1 ECCENTRIC REDUCER (DT11)

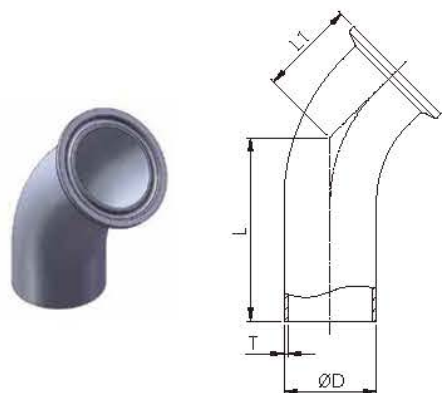
SIZE	ØD	Ød	L	L1	T	t
3/4"×1/2"	19.05	12.7	101.6	53.93	1.65	1.65
1.0"×1/2"	25.4	12.7	114.3	63.5	1.65	1.65
1.0"×3/4"	25.4	19.05	101.6	53.93	1.65	1.65
1.5"×1/2"	38.1	12.7	139.7	76.2	1.65	1.65
1.5"×3/4"	38.1	19.05	127	76.2	1.65	1.65
1.5"×1.0"	38.1	25.4	127	63.5	1.65	1.65
2.0"×1/2"	50.8	12.7	196.9	85.73	1.65	1.65
2.0"×3/4"	50.8	19.05	184.2	85.73	1.65	1.65
2.0"×1.0"	50.8	25.4	184.2	85.73	1.65	1.65
2.0"×1.5"	50.8	38.1	133.4	63.5	1.65	1.65
2.5"×1/2"	63.5	12.7	247.7	—	1.65	1.65
2.5"×3/4"	63.5	19.05	235	—	1.65	1.65
2.5"×1.0"	63.5	25.4	235	85.73	1.65	1.65
2.5"×1.5"	63.5	38.1	184.2	85.73	1.65	1.65
2.5"×2.0"	63.5	50.8	139.7	63.5	1.65	1.65
3.0"×1.0"	76.2	25.4	285.8	107.95	1.65	1.65
3.0"×1.5"	76.2	38.1	235	107.95	1.65	1.65
3.0"×2.0"	76.2	50.8	190.5	85.73	1.65	1.65
3.0"×2.5"	76.2	63.5	139.7	66.68	1.65	1.65
4.0"×1.0"	101.6	25.4	393.7	—	2.11	1.65
4.0"×1.5"	101.6	38.1	342.9	—	2.11	1.65
4.0"×2.0"	101.6	50.8	298.5	130.18	2.11	1.65
4.0"×2.5"	101.6	63.5	247.7	107.95	2.11	1.65
4.0"×3.0"	101.6	76.2	196.9	98.43	2.11	1.65
6.0"×3.0"	152.4	76.2	—	184.15	2.77	1.65
6.0"×4.0"	152.4	101.6	254	142.88	2.77	2.11

BPE Fittings



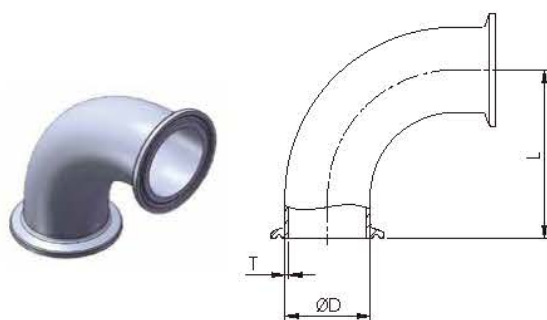
DT-4.1.1-2 90° CLAMP/WELD ELBOW (DT-12)

SIZE	ØD	L	L1	T
1/2"	12.7	41.28	76.2	1.65
3/4"	19.05	41.28	76.2	1.65
1"	25.4	50.8	76.2	1.65
1.5"	38.1	69.85	95.25	1.65
2"	50.8	88.9	120.65	1.65
2.5"	63.5	107.95	139.7	1.65
3"	76.2	127	158.75	1.65
4"	101.6	168.28	203.2	2.11
6"	152.4	266.7	292.1	2.77



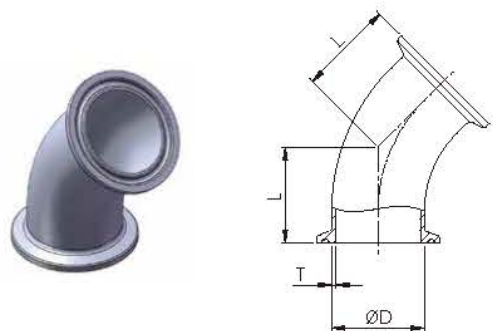
DT-4.1.1-5 45° CLAMP/WELD ELBOW (DT-13)

SIZE	ØD	L	L1	T
1/2"	12.7	57.15	25.4	1.65
3/4"	19.05	57.15	25.4	1.65
1"	25.4	57.15	28.58	1.65
1.5"	38.1	63.5	36.53	1.65
2"	50.8	76.2	44.45	1.65
2.5"	63.5	85.73	52.4	1.65
3"	76.2	92.08	60.33	1.65
4"	101.6	114.3	79.38	2.11
6"	152.4	158.75	133.35	2.77



DT-4.1.1-3 90° CLAMP ELBOW (DT-16)

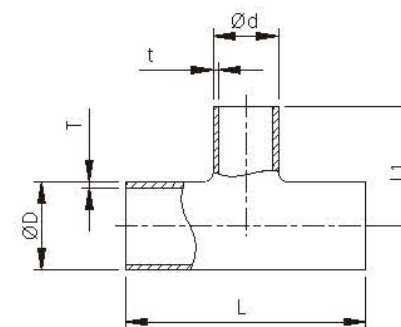
SIZE	ØD	L	T
1/2"	12.7	41.28	1.65
3/4"	19.05	41.28	1.65
1"	25.4	50.8	1.65
1.5"	38.1	69.85	1.65
2"	50.8	88.9	1.65
2.5"	63.5	107.95	1.65
3"	76.2	127	1.65
4"	101.6	168.28	2.11
6"	152.4	266.7	2.77



DT-4.1.1-6 45° CLAMP ELBOW (DT-17)

SIZE	ØD	L	T
1/2"	12.7	25.4	1.65
3/4"	19.05	25.4	1.65
1"	25.4	28.58	1.65
1.5"	38.1	36.5	1.65
2"	50.8	44.45	1.65
2.5"	63.5	52.4	1.65
3"	76.2	60.33	1.65
4"	101.6	79.38	2.11
6"	152.4	133.35	2.77

BPE Fittings



DT-4.1.2-6 REDUCING TEE (DT-10)

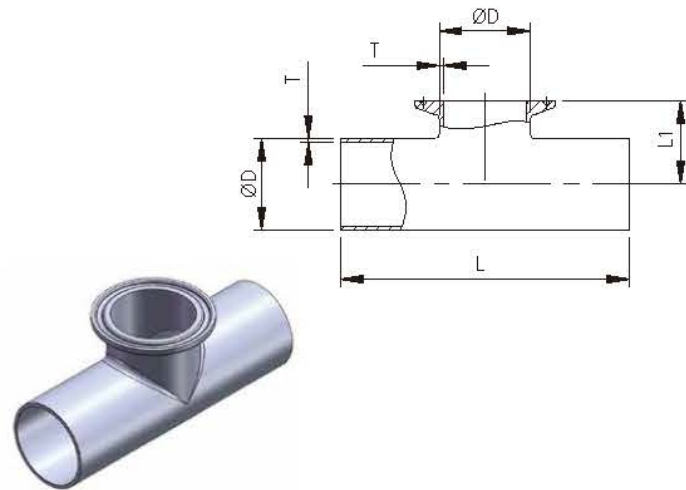
SIZE	ØD	Ød	L	L1	T	t
3/4"×1/2"	19.05	12.7	101.6	50.8	1.65	1.65
1"×1/2"	25.4	12.7	107.96	53.98	1.65	1.65
1"×3/4"	25.4	19.05	107.96	53.98	1.65	1.65
1.5"×1/2"	38.1	12.7	120.66	60.33	1.65	1.65
1.5"×3/4"	38.1	19.05	120.66	60.33	1.65	1.65
1.5"×1"	38.1	25.4	120.66	60.33	1.65	1.65
2"×1/2"	50.8	12.7	146.06	66.68	1.65	1.65
2"×3/4"	50.8	19.05	146.06	66.68	1.65	1.65
2"×1"	50.8	25.4	146.06	66.68	1.65	1.65
2"×1.5"	50.8	38.1	146.06	66.68	1.65	1.65
2.5"×1/2"	63.5	12.7	158.76	73.03	1.65	1.65
2.5"×3/4"	63.5	19.05	158.76	73.03	1.65	1.65
2.5"×1"	63.5	25.4	158.76	73.03	1.65	1.65
2.5"×1.5"	63.5	38.1	158.76	73.03	1.65	1.65
2.5"×2"	63.5	50.8	158.76	73.03	1.65	1.65
3"×1/2"	76.2	12.7	171.46	79.38	1.65	1.65
3"×3/4"	76.2	19.05	171.46	79.38	1.65	1.65
3"×1"	76.2	25.4	171.46	79.38	1.65	1.65
3"×1.5"	76.2	38.1	171.46	79.38	1.65	1.65
3"×2"	76.2	50.8	171.46	79.38	1.65	1.65
3"×2.5"	76.2	63.5	171.46	79.38	1.65	1.65
4"×1/2"	101.6	12.7	209.56	92.08	2.11	1.65
4"×3/4"	101.6	19.05	209.56	92.08	2.11	1.65
4"×1"	101.6	25.4	209.56	92.08	2.11	1.65
4"×1.5"	101.6	38.1	209.56	92.08	2.11	1.65
4"×2"	101.6	50.8	209.56	98.43	2.11	1.65
4"×2.5"	101.6	63.5	209.56	98.43	2.11	1.65
4"×3"	101.6	76.2	209.56	98.43	2.11	1.65
6"×3"	152.4	76.2	285.76	123.83	2.77	1.65
6"×4"	152.4	101.6	285.76	130.18	2.77	2.11

DT-4.1.2-7 SHORT OUTLET W/C REDUCING TEE (DT-14)

SIZE	ØD	Ød	L	L1	T	t
3/4"×1/2"	19.05	12.7	101.6	25.4	1.65	1.65
1"×1/2"	25.4	12.7	107.96	28.58	1.65	1.65
1"×3/4"	25.4	19.05	107.96	28.58	1.65	1.65
1.5"×1/2"	38.1	12.7	120.66	34.93	1.65	1.65
1.5"×3/4"	38.1	19.05	120.66	34.93	1.65	1.65
1.5"×1"	38.1	25.4	120.66	34.93	1.65	1.65
2"×1/2"	50.8	12.7	146.06	41.28	1.65	1.65
2"×3/4"	50.8	19.05	146.06	41.28	1.65	1.65
2"×1"	50.8	25.4	146.06	41.28	1.65	1.65
2"×1.5"	50.8	38.1	146.06	41.28	1.65	1.65
2.5"×1/2"	63.5	12.7	158.76	47.63	1.65	1.65
2.5"×3/4"	63.5	19.05	158.76	47.63	1.65	1.65
2.5"×1"	63.5	25.4	158.76	47.63	1.65	1.65
2.5"×1.5"	63.5	38.1	158.76	47.63	1.65	1.65
2.5"×2"	63.5	50.8	158.76	47.63	1.65	1.65
3"×1/2"	76.2	12.7	171.46	53.98	1.65	1.65
3"×3/4"	76.2	19.05	171.46	53.98	1.65	1.65
3"×1"	76.2	25.4	171.46	53.98	1.65	1.65
3"×1.5"	76.2	38.1	171.46	53.98	1.65	1.65
3"×2"	76.2	50.8	171.46	53.98	1.65	1.65
3"×2.5"	76.2	63.5	171.46	53.98	1.65	1.65
4"×1/2"	101.6	12.7	209.56	66.68	2.11	1.65
4"×3/4"	101.6	19.05	209.56	66.68	2.11	1.65
4"×1"	101.6	25.4	209.56	66.68	2.11	1.65
4"×1.5"	101.6	38.1	209.56	66.68	2.11	1.65
4"×2"	101.6	50.8	209.56	66.68	2.11	1.65
4"×2.5"	101.6	63.5	209.56	66.68	2.11	1.65
4"×3"	101.6	76.2	209.56	66.68	2.11	1.65
6"×1/2"	152.4	12.7	285.76	92.08	2.77	1.65
6"×3/4"	152.4	19.05	285.76	92.08	2.77	1.65
6"×1"	152.4	25.4	285.76	92.08	2.77	1.65
6"×1.5"	152.4	38.1	285.76	92.08	2.77	1.65
6"×2"	152.4	50.8	285.76	92.08	2.77	1.65
6"×2.5"	152.4	63.5	285.76	92.08	2.77	1.65
6"×3"	152.4	76.2	285.76	92.08	2.77	1.65
6"×4"	152.4	101.6	285.76	92.25	2.77	2.11

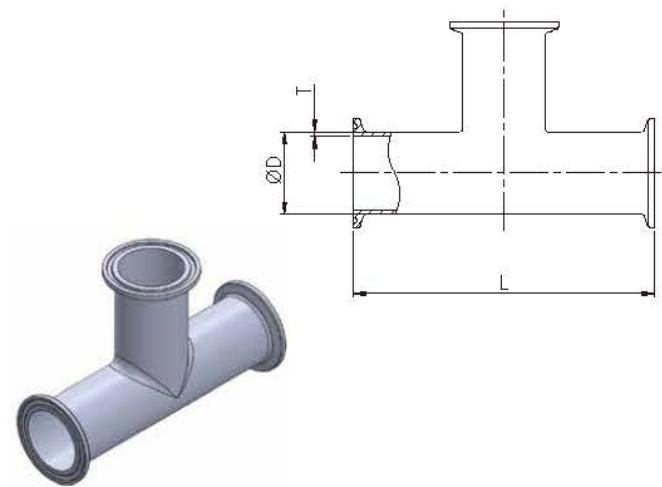


BPE Fittings



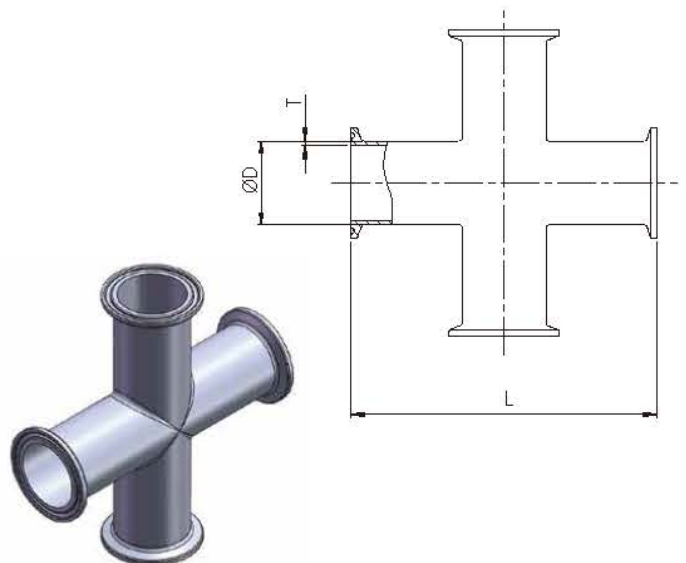
DT-4.1.2-2 EQUAL OUTLET WELD/CLAMP TEE (DT-15)

SIZE	ØD	L	L1	T
1/2"	12.7	95.26	25.4	1.65
3/4"	19.05	101.6	28.58	1.65
1"	25.4	107.96	28.59	1.65
1.5"	38.1	120.66	34.39	1.65
2"	50.8	146.06	41.28	1.65
2.5"	63.5	158.76	47.63	1.65
3"	76.2	171.46	53.98	1.65
4"	101.6	209.56	69.85	2.11
6"	152.4	285.76	117.48	2.77



DT-4.1.2-4T CLAMP TEE (DT-18)

SIZE	ØD	L	T
1/2"	12.7	114.3	1.65
3/4"	19.05	120.66	1.65
1"	25.4	133.36	1.65
1.5"	38.1	146.06	1.65
2"	50.8	171.46	1.65
2.5"	63.5	184.16	1.65
3"	76.2	196.86	1.65
4"	101.6	241.3	2.11
6"	152.4	361.96	2.77



DT-4.1.2-4C CLAMP CROSS (DT-18)

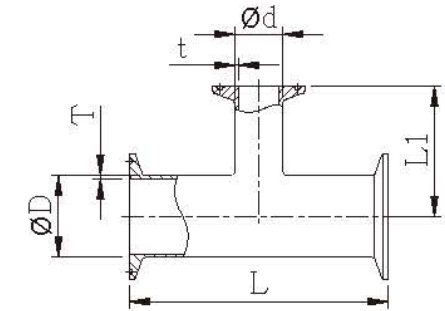
SIZE	ØD	L	T
1/2"	12.7	114.3	1.65
3/4"	19.05	120.66	1.65
1"	25.4	133.36	1.65
1.5"	38.1	146.06	1.65
2"	50.8	171.46	1.65
2.5"	63.5	184.16	1.65
3"	76.2	196.86	1.65
4"	101.6	241.3	2.11
6"	152.4	361.96	2.77

BPE Fittings



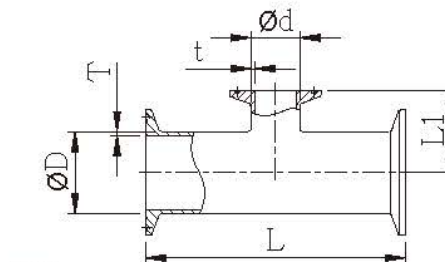
DT-4.1.2-8 REDUCING TEE CLAMP END (DT-19)

SIZE	ØD	Ød	L	L1	T	t
3/4"×1/2"	19.05	12.7	127	63.5	1.65	1.65
1.0"×1/2"	25.4	12.7	133.36	66.68	1.65	1.65
1.0"×3/4"	25.4	19.05	133.36	66.68	1.65	1.65
1.5"×1/2"	38.1	12.7	146.06	73.03	1.65	1.65
1.5"×3/4"	38.1	19.05	146.06	73.03	1.65	1.65
1.5"×1.0"	38.1	25.4	146.06	73.03	1.65	1.65
2.0"×1/2"	50.8	12.7	171.46	79.38	1.65	1.65
2.0"×3/4"	50.8	19.05	171.46	79.38	1.65	1.65
2.0"×1.0"	50.8	25.4	171.46	79.38	1.65	1.65
2.0"×1.5"	50.8	38.1	171.46	79.38	1.65	1.65
2.5"×1/2"	63.5	12.7	184.16	85.73	1.65	1.65
2.5"×3/4"	63.5	19.05	184.16	85.73	1.65	1.65
2.5"×1.0"	63.5	25.4	184.16	85.73	1.65	1.65
2.5"×1.5"	63.5	38.1	184.16	85.73	1.65	1.65
2.5"×2.0"	63.5	50.8	184.16	85.73	1.65	1.65



DT-4.1.2-9 REDUCING TEE CLAMP END (DT-20)

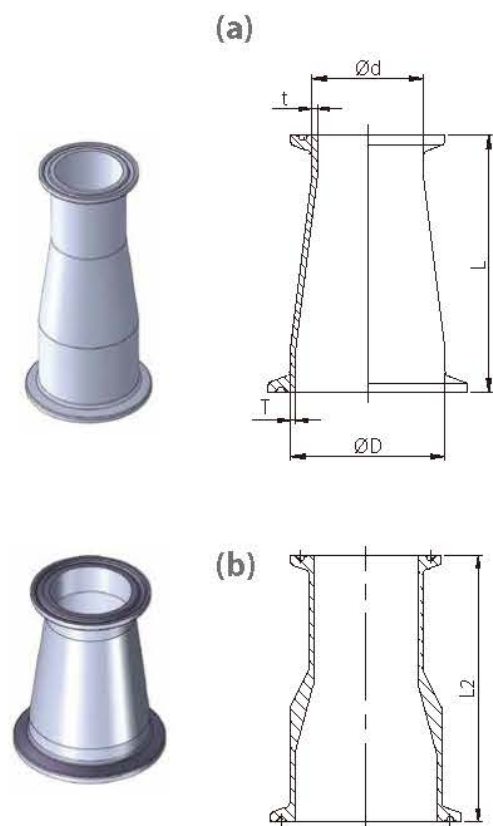
SIZE	ØD	Ød	L	L1	T	t
3/4"×1/2"	19.05	12.7	127	25.4	1.65	1.65
1.0"×1/2"	25.4	12.7	133.36	28.58	1.65	1.65
1.0"×3/4"	25.4	19.05	133.36	28.58	1.65	1.65
1.5"×1/2"	38.1	12.7	146.06	34.93	1.65	1.65
1.5"×3/4"	38.1	19.05	146.06	34.93	1.65	1.65
1.5"×1.0"	38.1	25.4	146.06	34.93	1.65	1.65
2.0"×1/2"	50.8	12.7	171.46	41.28	1.65	1.65
2.0"×3/4"	50.8	19.05	171.46	41.28	1.65	1.65
2.0"×1.0"	50.8	25.4	171.46	41.28	1.65	1.65
2.0"×1.5"	50.8	38.1	171.46	41.28	1.65	1.65
2.5"×1/2"	63.5	12.7	184.16	47.63	1.65	1.65
2.5"×3/4"	63.5	19.05	184.16	47.63	1.65	1.65
2.5"×1.0"	63.5	25.4	184.16	47.63	1.65	1.65
2.5"×1.5"	63.5	38.1	184.16	47.63	1.65	1.65
2.5"×2.0"	63.5	50.8	184.16	47.63	1.65	1.65
3.0"×1/2"	76.2	12.7	196.86	53.98	1.65	1.65
3.0"×3/4"	76.2	19.05	196.86	53.98	1.65	1.65
3.0"×1.0"	76.2	25.4	196.86	53.98	1.65	1.65



SIZE	ØD	Ød	L	L1	T	t
3.0"×1.5"	76.2	38.1	196.86	53.98	1.65	1.65
3.0"×2.0"	76.2	50.8	196.86	53.98	1.65	1.65
3.0"×2.5"	76.2	63.5	196.86	53.98	1.65	1.65
4.0"×1/2"	101.6	12.7	241.3	66.68	2.11	1.65
4.0"×3/4"	101.6	19.05	241.3	66.68	2.11	1.65
4.0"×1.0"	101.6	25.4	241.3	66.68	2.11	1.65
4.0"×1.5"	101.6	38.1	241.3	66.68	2.11	1.65
4.0"×2.0"	101.6	50.8	241.3	66.68	2.11	1.65
4.0"×2.5"	101.6	63.5	241.3	66.68	2.11	1.65
4.0"×3.0"	101.6	76.2	241.3	66.68	2.11	1.65
6.0"×1/2"	152.4	12.7	361.96	92.08	2.77	1.65
6.0"×3/4"	152.4	19.05	361.96	92.08	2.77	1.65
6.0"×1.0"	152.4	25.4	361.96	92.08	2.77	1.65
6.0"×1.5"	152.4	38.1	361.96	92.08	2.77	1.65
6.0"×2.0"	152.4	50.8	361.96	92.08	2.77	1.65
6.0"×2.5"	152.4	63.5	361.96	92.08	2.77	1.65
6.0"×3.0"	152.4	76.2	361.96	92.08	2.77	1.65
6.0"×4.0"	152.4	101.6	361.96	95.25	2.77	2.11

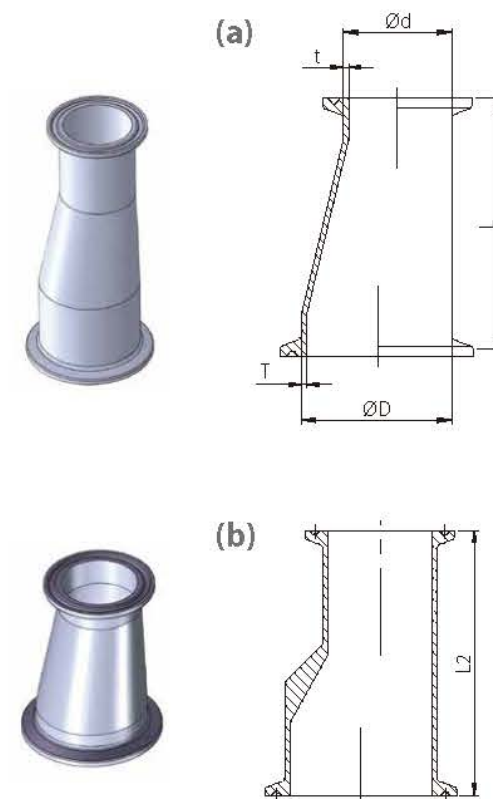
BPE Fittings

DT-4.1.3-3 CLAMP CONCENTRIC REDUCER (DT-21)



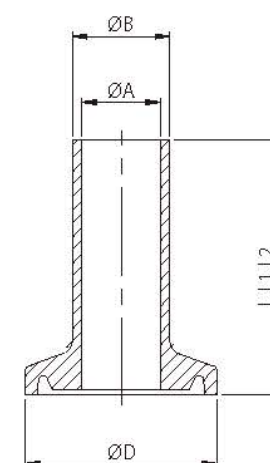
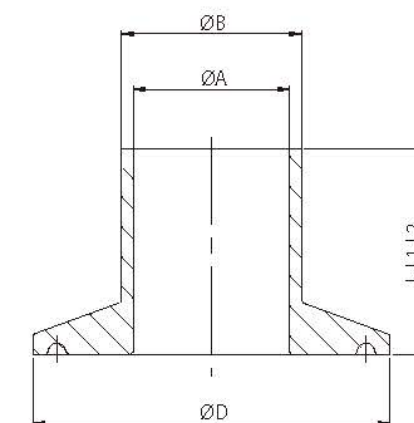
SIZE	ØD	Ød	L	T	t	L2
3/4"×1/2"	19.05	12.7	50.8	1.65	1.65	79.38
1"×1/2"	25.4	12.7	63.5	1.65	1.65	88.9
1"×3/4"	25.4	19.05	50.8	1.65	1.65	79.38
1.5"×1/2"	38.1	12.7	88.9	1.65	1.65	101.6
1.5"×3/4"	38.1	19.05	76.2	1.65	1.65	101.6
1.5"×1"	38.1	25.4	76.2	1.65	1.65	88.9
2"×1/2"	50.8	12.7	139.7	1.65	1.65	111.13
2"×3/4"	50.8	19.05	127	1.65	1.65	111.13
2"×1"	50.8	25.4	127	1.65	1.65	111.13
2"×1.5"	50.8	38.1	76.2	1.65	1.65	88.9
2.5"×1/2"	63.5	12.7	190.5	1.65	1.65	—
2.5"×3/4"	63.5	19.05	177.8	1.65	1.65	—
2.5"×1"	63.5	25.4	177.8	1.65	1.65	111.13
2.5"×1.5"	63.5	38.1	127	1.65	1.65	111.13
2.5"×2"	63.5	50.8	76.2	1.65	1.65	88.9
3"×1"	76.2	25.4	288.6	1.65	1.65	133.35
3"×1.5"	76.2	38.1	117.8	1.65	1.65	133.35
3"×2"	76.2	50.8	127	1.65	1.65	111.13
3"×2.5"	76.2	63.5	76.2	1.65	1.65	92.08
4"×1"	101.6	25.4	333.4	2.11	1.65	—
4"×1.5"	101.6	38.1	282.6	2.11	1.65	—
4"×2"	101.6	50.8	231.8	2.11	1.65	158.75
4"×2.5"	101.6	63.5	181	2.11	1.65	136.53
4"×3"	101.6	76.2	130.2	2.11	2.1	127
6"×3"	152.4	76.2	—	2.77	1.65	215.9
6"×4"	152.4	101.6	193.7	2.77	2.11	177.8

DT-4.1.3-3 CLAMP ECCENTRIC REDUCER (DT-21)



SIZE	ØD	Ød	L	T	t	L2
3/4"×1/2"	19.05	12.7	50.8	1.65	1.65	79.38
1"×1/2"	25.4	12.7	63.5	1.65	1.65	88.9
1"×3/4"	25.4	19.05	50.8	1.65	1.65	79.38
1.5"×1/2"	38.1	12.7	88.9	1.65	1.65	101.6
1.5"×3/4"	38.1	19.05	76.2	1.65	1.65	101.6
1.5"×1"	38.1	25.4	76.2	1.65	1.65	88.9
2"×1/2"	50.8	12.7	139.7	1.65	1.65	111.13
2"×3/4"	50.8	19.05	127	1.65	1.65	111.13
2"×1"	50.8	25.4	127	1.65	1.65	111.13
2"×1.5"	50.8	38.1	76.2	1.65	1.65	88.9
2.5"×1/2"	63.5	12.7	190.5	1.65	1.65	—
2.5"×3/4"	63.5	19.05	177.8	1.65	1.65	—
2.5"×1"	63.5	25.4	177.8	1.65	1.65	111.13
2.5"×1.5"	63.5	38.1	127	1.65	1.65	111.13
2.5"×2"	63.5	50.8	76.2	1.65	1.65	88.9
3"×1"	76.2	25.4	288.6	1.65	1.65	133.35
3"×1.5"	76.2	38.1	117.8	1.65	1.65	133.35
3"×2"	76.2	50.8	127	1.65	1.65	111.13
3"×2.5"	76.2	63.5	76.2	1.65	1.65	92.08
4"×1"	101.6	25.4	333.4	2.11	1.65	—
4"×1.5"	101.6	38.1	282.6	2.11	1.65	—
4"×2"	101.6	50.8	231.8	2.11	1.65	158.75
4"×2.5"	101.6	63.5	181	2.11	1.65	136.53
4"×3"	101.6	76.2	130.2	2.11	2.11	127
6"×3"	152.4	76.2	—	2.77	1.65	215.9
6"×4"	152.4	101.6	193.7	2.77	2.11	177.8

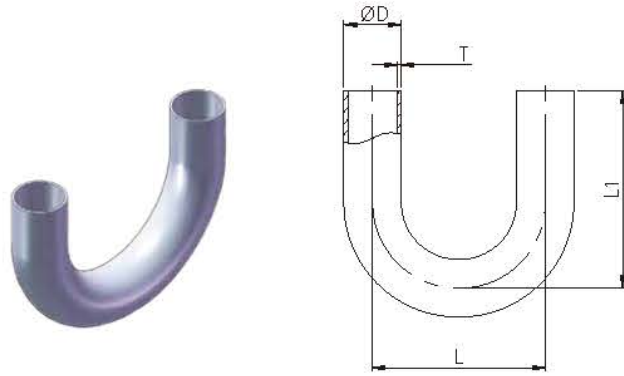
BPE Fittings

(Type A)
1/2"~1"(Type B)
1"~6"

DT-4.1.4-1WELD FERRULE (DT-22)

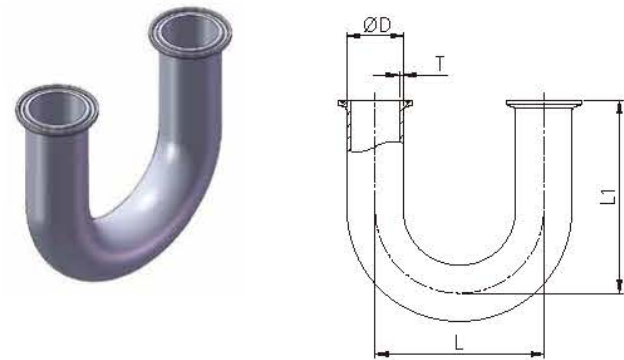
TYPE	SIZE	ØA	ØB	ØD	L	L1	L2
A	1/4"	4.57	6.35	25	12.7	28.58	44.45
	3/8"	7.75	9.53	25	12.7	28.58	44.45
	1/2"	9.4	12.7	25	12.7	28.58	44.45
	3/4"	15.75	19.05	25	12.7	28.58	44.45
	1.0"	22.1	25.4	34	12.7	28.58	44.45
B	1.0"	22.1	25.4	50.39	12.7	28.58	44.45
	1.5"	34.8	38.1	50.39	12.7	28.58	44.45
	2.0"	47.5	50.8	63.91	12.7	28.58	57.15
	2.5"	60.2	63.5	77.39	12.7	28.58	57.15
	3.0"	72.9	76.2	90.91	12.7	28.58	57.15
	4.0"	97.38	101.6	118.92	15.88	28.58	57.15
	6.0"	146.86	152.4	166.88	19.05	38.1	76.2

BPE Fittings



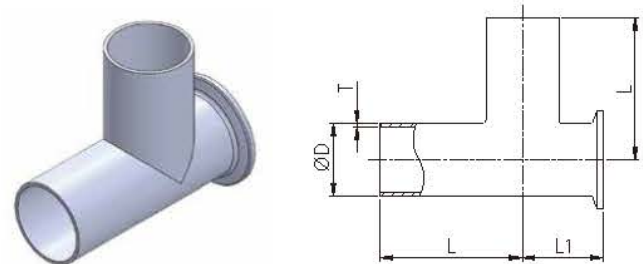
DT-4.1.1-7 180° WELD ELBOW (DT-23)

SIZE	ØD	L	L1	T
1/2"	12.7	114.3	76.2	1.65
3/4"	19.05	114.3	76.2	1.65
1"	25.4	76.2	76.2	1.65
1.5"	38.1	114.3	114.3	1.65
2"	50.8	152.4	127	1.65
2.5"	63.5	190.5	146.05	1.65
3"	76.2	228.6	165.1	1.65
4"	101.6	304.8	215.9	2.11
6"	152.4	457.2	292.1	2.77



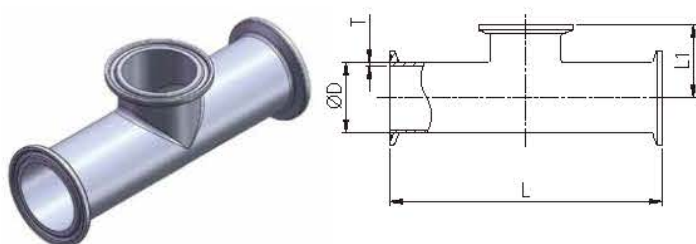
DT-4.1.1-8 180° CLAMP ELBOW (DT-24)

SIZE	ØD	L	L1	T
1/2"	12.7	114.3	88.9	1.65
3/4"	19.05	114.3	88.9	1.65
1"	25.4	76.2	88.9	1.65
1.5"	38.1	114.3	127	1.65
2"	50.8	152.4	139.7	1.65
2.5"	63.5	190.5	158.78	1.65
3"	76.2	228.6	177.8	1.65
4"	101.6	304.8	231.78	2.11
6"	152.4	457.2	330.2	2.77



DT-4.1.2-3 SHORT OUTLET RUN WELD/CLAMP TEE (DT-25)

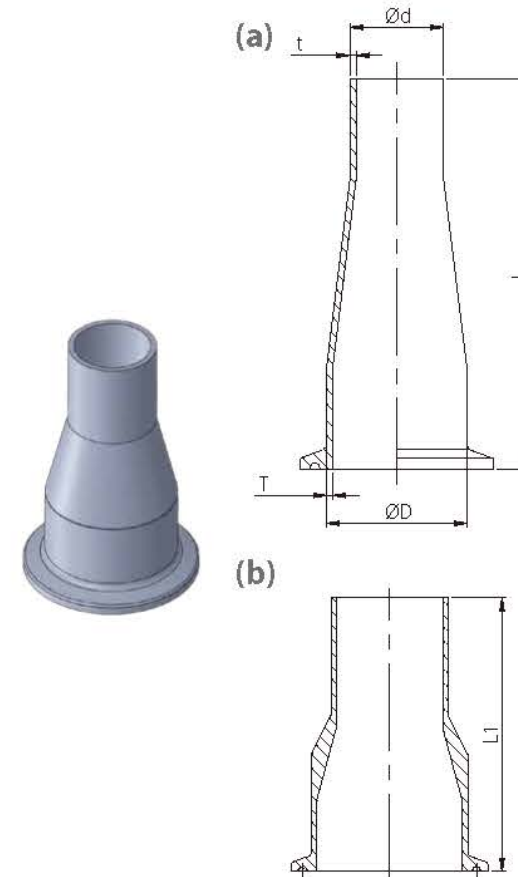
SIZE	ØD	L	L1	T
1/2"	12.7	47.63	22.23	1.65
3/4"	19.05	50.8	25.4	1.65
1"	25.4	53.98	28.58	1.65
1.5"	38.1	60.33	34.93	1.65
2"	50.8	73.03	41.28	1.65
2.5"	63.5	79.38	47.63	1.65
3"	76.2	85.73	53.98	1.65
4"	101.6	104.78	69.85	2.11
6"	152.4	142.88	117.48	2.77



DT-4.1.2-5 SHORT OUTLET TEE CLAMP END (DT-27)

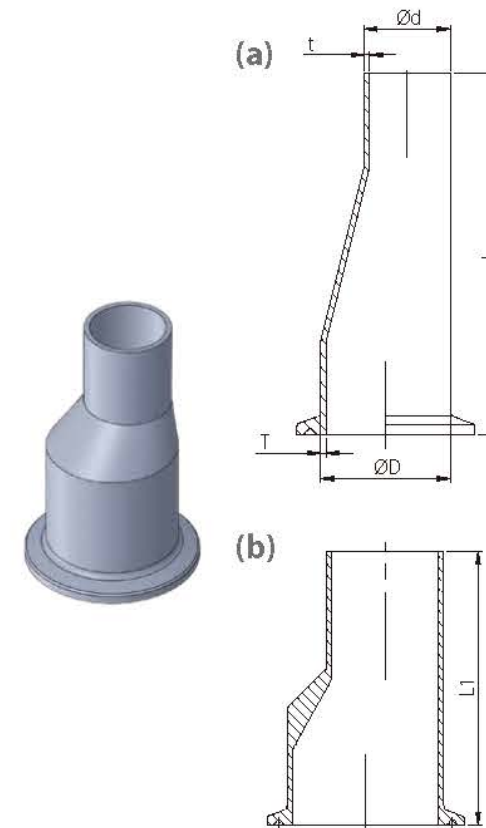
SIZE	ØD	L	L1	T
1/2"	12.7	114.3	25.4	1.65
3/4"	19.05	120.66	28.58	1.65
1"	25.4	133.36	28.58	1.65
1.5"	38.1	146.06	34.93	1.65
2"	50.8	171.46	41.28	1.65
2.5"	63.5	184.16	47.63	1.65
3"	76.2	196.86	53.98	1.65
4"	101.6	241.3	69.85	2.11
6"	152.4	361.96	117.48	2.77

BPE Fittings



DT-4.1.3-2AC CONCENTRIC REDUCER (DT-26)

SIZE	ØD	Ød	T	t	L	L1
3/4"×1/2"	19.05	12.7	1.65	1.65	76.2	66.68
1"×1/2"	25.4	12.7	1.65	1.65	88.9	76.2
1"×3/4"	25.4	19.05	1.65	1.65	76.2	66.68
1.5"×1/2"	38.1	12.7	1.65	1.65	—	88.9
1.5"×3/4"	38.1	19.05	1.65	1.65	101.6	88.9
1.5"×1"	38.1	25.4	1.65	1.65	101.6	76.2
2"×1/2"	50.8	12.7	1.65	1.65	—	98.43
2"×3/4"	50.8	19.05	1.65	1.65	—	98.43
2"×1"	50.8	25.4	1.65	1.65	152.4	98.43
2"×1.5"	50.8	38.1	1.65	1.65	101.6	76.2
2.5"×1"	63.5	25.4	1.65	1.65	—	98.43
2.5"×1.5"	63.5	38.1	1.65	1.65	152.4	98.43
2.5"×2"	63.5	50.8	1.65	1.65	107.9	76.2
3"×1"	76.2	25.4	1.65	1.65	—	120.65
3"×1.5"	76.2	38.1	1.65	1.65	203.2	120.65
3"×2"	76.2	50.8	1.65	1.65	158.8	98.43
3"×2.5"	76.2	63.5	1.65	1.65	108	79.38
4"×2"	101.6	50.8	2.11	1.65	263.5	146.05
4"×2.5"	101.6	63.5	2.11	1.65	212.7	123.83
4"×3"	101.6	76.2	2.11	1.65	161.9	114.3
6"×3"	152.4	76.2	2.77	2.77	228.6	203.2
6"×4"	152.4	101.6	2.77	2.77	228.6	161.93

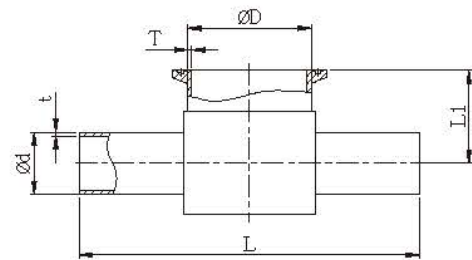


DT-4.1.3-2AE ECCENTRIC REDUCER (DT-26)

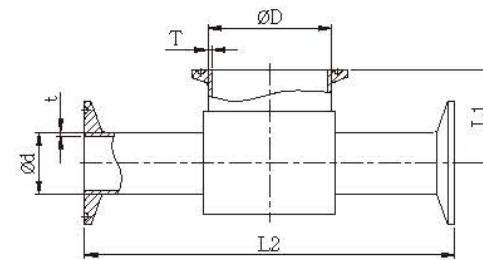
SIZE	ØD	Ød	T	t	L	L1
3/4"×1/2"	19.05	12.7	1.65	1.65	76.2	66.68
1"×1/2"	25.4	12.7	1.65	1.65	88.9	76.2
1"×3/4"	25.4	19.05	1.65	1.65	76.2	66.68
1.5"×1/2"	38.1	12.7	1.65	1.65	—	88.9
1.5"×3/4"	38.1	19.05	1.65	1.65	101.6	88.9
1.5"×1"	38.1	25.4	1.65	1.65	101.6	76.2
2"×1/2"	50.8	12.7	1.65	1.65	—	98.43
2"×3/4"	50.8	19.05	1.65	1.65	—	98.43
2"×1"	50.8	25.4	1.65	1.65	152.4	98.43
2"×1.5"	50.8	38.1	1.65	1.65	101.6	76.2
2.5"×1"	63.5	25.4	1.65	1.65	—	98.43
2.5"×1.5"	63.5	38.1	1.65	1.65	152.4	98.43
2.5"×2"	63.5	50.8	1.65	1.65	107.9	76.2
3"×1"	76.2	25.4	1.65	1.65	—	120.65
3"×1.5"	76.2	38.1	1.65	1.65	203.2	120.65
3"×2"	76.2	50.8	1.65	1.65	158.8	98.43
3"×2.5"	76.2	63.5	1.65	1.65	108	79.38
4"×2"	101.6	50.8	2.11	1.65	263.5	146.05
4"×2.5"	101.6	63.5	2.11	1.65	212.7	123.83
4"×3"	101.6	76.2	2.11	1.65	161.9	114.3
6"×3"	152.4	76.2	2.77	1.65	222.3	203.2
6"×4"	152.4	101.6	2.77	2.11	228.6	161.93

BPE Fittings

DT-4.1.2-10 (DT-28)



DT-4.1.2-11 (DT-29)

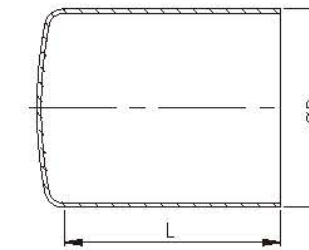


INSTRUMENT TEE WELD/CLAMP END

SIZE	ØD	Ød	L	L1	L2	T	t
1.5" 1/2"	38.1	12.7	127	22.23	152.4	1.65	1.65
1.5" 3/4"	38.1	19.05	127	25.4	152.4	1.65	1.65
1.5" 1"	38.1	25.4	127	28.58	152.4	1.65	1.65
2" 1/2"	50.8	12.7	139.7	25.4	165.1	1.65	1.65
2" 3/4"	50.8	19.05	139.7	28.58	165.1	1.65	1.65
2" 1"	50.8	25.4	139.7	31.75	165.1	1.65	1.65
2" 1.5"	50.8	38.1	139.7	38.1	165.1	1.65	1.65
2.5" 1/2"	63.5	12.7	170	35	195.4	1.65	1.65
2.5" 3/4"	63.5	19.05	170	38.1	195.4	1.65	1.65
2.5" 1"	63.5	25.4	170	41.3	195.4	1.65	1.65
2.5" 1.5"	63.5	38.1	170	44.5	195.4	1.65	1.65
2.5" 2"	63.5	50.8	170	48	195.4	1.65	1.65
3" 1/2"	76.2	12.7	180	38.1	205.4	1.65	1.65
3" 3/4"	76.2	19.05	180	41.3	205.4	1.65	1.65
3" 1"	76.2	25.4	180	44.5	205.4	1.65	1.65
3" 1.5"	76.2	38.1	180	48	205.4	1.65	1.65
3" 2"	76.2	50.8	180	50.8	205.4	1.65	1.65
3" 2.5"	76.2	63.5	180	54	205.4	1.65	1.65
4" 1/2"	101.6	12.7	220	79.4	245.4	1.65	1.65
4" 3/4"	101.6	19.05	220	82.6	245.4	1.65	1.65
4" 1"	101.6	25.4	220	85.7	245.4	2.11	1.65
4" 1.5"	101.6	38.1	220	88.9	245.4	2.11	1.65
4" 2"	101.6	50.8	220	95.2	245.4	2.11	1.65
4" 2.5"	101.6	63.5	220	98.4	245.4	2.11	1.65
4" 3"	101.6	76.2	220	101.6	245.4	2.11	1.65

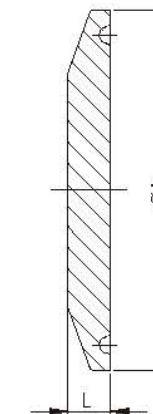
BPE Fittings

DT-4.1.5-1 AUTOMATIC TUBE WELD CAP(DT-30)



SIZE	ØD	L
1/2"	12.7	38.1
3/4"	19.05	38.1
1.0"	25.4	38.1
1.5"	38.1	38.1
2.0"	50.8	38.1
2.5"	63.5	38.1
3.0"	76.2	44.45
4.0"	101.6	50.8
6.0"	152.4	63.5

DT-4.1.5-2 SOLID END CAP HYGINIC CLAMP JOINE(DT-31)



SIZE	ØD	L
1/4"	25	4.75
3/8"	25	4.75
1/2"	25	4.75
3/4"	25	4.75
1.0"	34/50.39	6.35
1.5"	50.39	6.35
2.0"	63.91	6.35
2.5"	77.39	6.35
3.0"	90.91	6.35
4.0"	118.92	7.92
6.0"	166.88	11.1

BPE Fittings

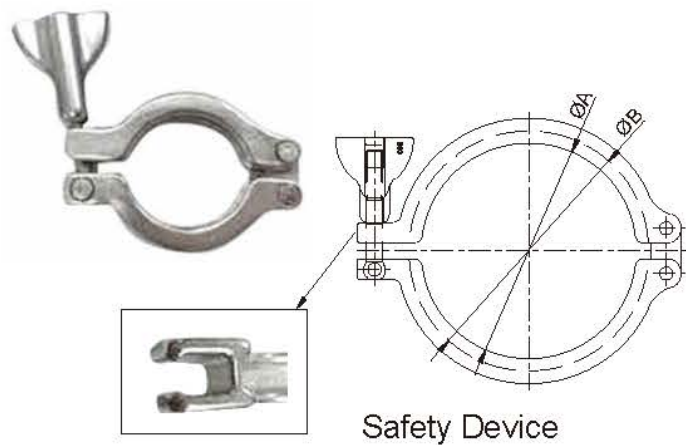
CSE 13SC Safety Clamp is an improved clamp for operator safety in various application including pharmaceutical and food industrial lines as hazardous areas and high temperature sections.

- Material: 304 / 316L (request is available by min. order)
- Application: Normal / Heavy Duty
- Safety Feature: Safety Gate & Eye-Bolt

The "gate" style section combined with the stepped eyebolt ensures that the clamps bolting mechanism cannot swing open whilst the clamping union is partly or fully assembled. Releasing the clamp is only possible when the wing nut has been significantly loosened to enable the smaller diameter of the eyebolt to swing open and pass through the sectioned gate; this ensures the clamp cannot be knocked or accidentally opened.

Complete wing /or hex nut removal is not necessary to open the clamp but the design guarantees that the eyebolt cannot swing open whilst the union is subjected to either clamping forces or internal pressure.

It is not possible to open the clamp by accident. Thus this clamp fulfils the safety requirements of numerous end-users in the pharmaceutical and food industry.

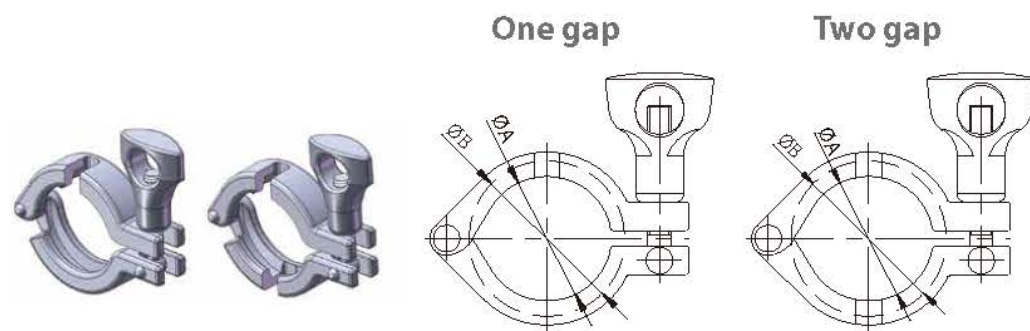


13SC SAFETY CLAMPS

Imperial	ØA	ØB	DN	ØA	ØB
1/2"~3/4"	20.58	28.34	DN10~DN20	27.2	37
1.0"~1.5"	41.02	53.52	DN25~DN40	44.5	54.5
2.0"	54.54	67.04	DN50	57	68
2.5"	68.02	80.52	DN65	84	95
3.0"	81.52	94.02	DN80	99	110
4.0"	109.54	122.04	DN100	112	123
6.0"	157.6	175.1	DN115	123	134
8.0"	207.4	225.9	DN125	144	159
			DN150	172	187
			DN200	222.5	237.5
			DN250	257	272
			DN300	308	323

Measuring temperature or bio-activity is necessary for validation processes.

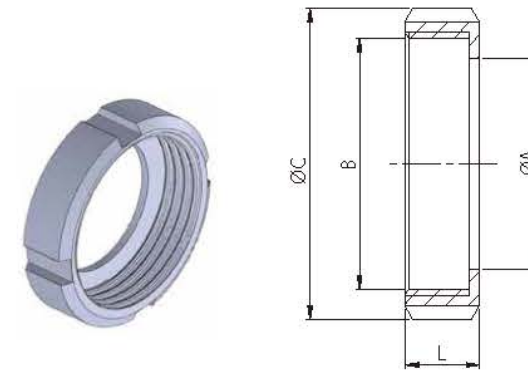
CSE's gap clamp with single slot or double slots has proven its value when validating sterility in a high-purity pharmaceutical system.



HEAVY DUTY SINGLE PIN CLAMP

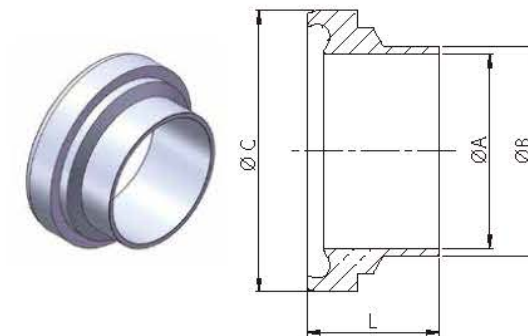
SIZE	ØA	ØB
1/2"~3/4"	21.2	28.2
1.0"~1.5"	42	53.6
2.0"	55.4	67
2.5"	69	80.6
3.0"	82.6	94.2
3.5"	97.6	109.2
4.0"	110.6	122.2

DIN 11853-1 Unions Form A



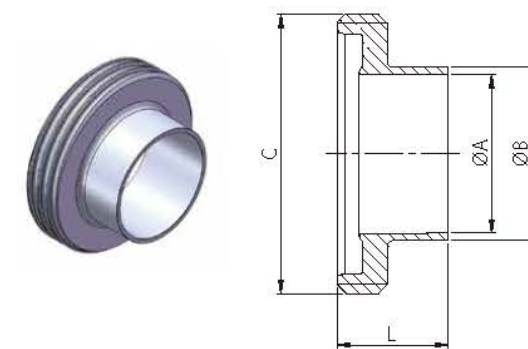
DIN-13R ROUND NUT

SIZE	ØA	B	ØC	L	SLOTS
10	19	RD 28*1/8	38	18	4
15	25	RD 34*1/8	44	18	4
20	31	RD 44*1/6	54	20	4
25	36	RD 52*1/6	63	21	4
32	42	RD 58*1/6	70	21	4
40	49	RD 65*1/6	78	21	4
50	62	RD 78*1/6	92	22	4
60	70	RD 85*1/6	99	22	4
65	80	RD 95*1/6	112	25	6
80	94	RD110*1/4	127	29	6
90	104	RD120*1/4	138	30	6
100	115	RD130*1/4	148	31	6
125	138	RD160*1/4	178	35	6
150	164	RD190*1/4	210	40	6



LINER PARTS

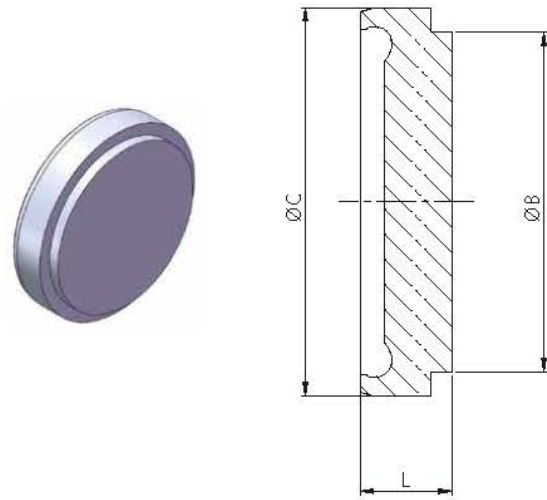
DIN	ØA	ØB	ISO	ØA	ØB	INCH	ØA	ØB	ØC	L
DN10	10	13	DN8	10.3	13.5	1/2"	9.4	12.7	21.9	17
DN15	16	19	DN10	14	17.2	3/4"	15.75	19.5	27.9	17
DN20	20	23	DN15	18.1	21.3	—	—	—	35.9	18
DN25	26	29	DN20	23.7	26.9	1"	22.1	25.4	42.9	22
DN32	32	35	DN25	29.7	33.7	—	—	—	48.9	25
DN40	38	41	DN32	38.4	42.4	1.5"	34.8	38.1	54.9	26
DN50	50	53	DN40	44.3	48.3	2"	47.5	50.8	66.9	30
DN65	66	70	DN50	56.3	60.3	2.5"	60.2	63.5	84.9	34
DN80	81	85	DN65	72.1	76.1	3"	72.9	76.2	98.9	38
DN100	100	104	DN80	84.3	88.9	4"	97.38	101.6	118.9	46



MALE PARTS

DIN	ØA	ØB	ISO	ØA	ØB	INCH	ØA	ØB	C	L
DN10	10	13	DN8	10.3	13.5	1/2"	9.4	12.7	RD28*1/8	19
DN15	16	19	DN10	14	17.2	3/4"	15.75	19.5	RD34*1/8	19
DN20	20	23	DN15	18.1	21.3	—	—	—	RD44*1/6	21
DN25	26	29	DN20	23.7	26.9	1"	22.1	25.4	RD52*1/6	26
DN32	32	35	DN25	29.7	33.7	—	—	—	RD58*1/6	30
DN40	38	41	DN32	38.4	42.4	1.5"	34.8	38.1	RD65*1/6	31
DN50	50	53	DN40	44.3	48.3	2"	47.5	50.8	RD78*1/6	31
DN65	66	70	DN50	56.3	60.3	2.5"	60.2	63.5	RD95*1/6	36
DN80	81	85	DN65	72.1	76.1	3"	72.9	76.2	RD110*1/4	42
DN100	100	104	DN80	84.3	88.9	4"	97.38	101.6	RD130*1/4	50

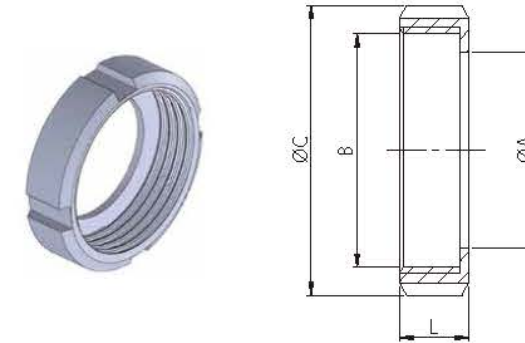
DIN 11853-1 & 11864-1 Unions Form A



DIN/ISO/IMPERIAL- LINER BLANK CAP

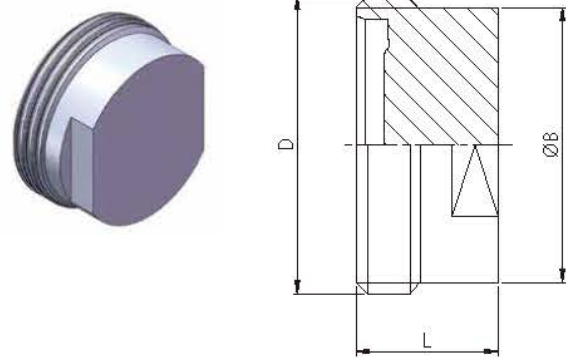
SIZE	ØB	ØC	L
DN10 1/2"	18	21.9	9
DN15 3/4"	24	27.9	9
DN20	30	35.9	10
DN25 1"	35	42.9	12
DN32	41	48.9	13
DN40 1.5"	48	54.9	13
DN50 2"	61	66.9	14
DN65 2.5"	79	84.9	16
DN80 3"	93	98.9	16
DN100 4"	114	118.9	20

DIN 11864-1 Unions Form A



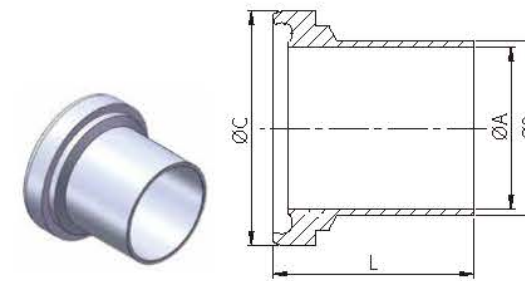
DIN-13R ROUND NUT

SIZE	ØA	B	ØC	L	SLOTS
10	19	RD 28*1/8	38	18	4
15	25	RD 34*1/8	44	18	4
20	31	RD 44*1/6	54	20	4
25	36	RD 52*1/6	63	21	4
32	42	RD 58*1/6	70	21	4
40	49	RD 65*1/6	78	21	4
50	62	RD 78*1/6	92	22	4
60	70	RD 85*1/6	99	22	4
65	80	RD 95*1/6	112	25	6
80	94	RD 110*1/4	127	29	6
90	104	RD 120*1/4	138	30	6
100	115	RD 130*1/4	148	31	6
125	138	RD 160*1/4	178	35	6
150	164	RD 190*1/4	210	40	6



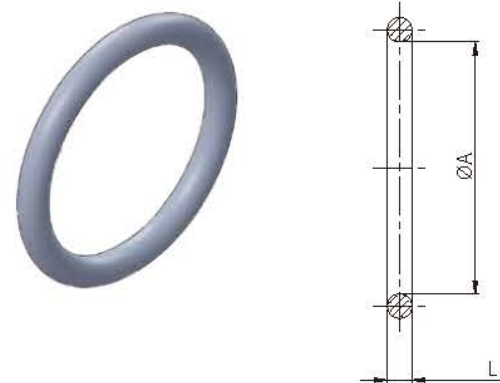
DIN/ISO/IMPERIAL- MALE BLANK CAP

DIN/ISO	L	Imperial	L	ØB	D
DN10	19	1/2"	24	23	RD28*1/8
DN15	19	3/4"	24	28	RD34*1/8
DN20	21	—	—	34	RD44*1/6
DN25	26	1"	24	44	RD52*1/6
DN32	30	—	—	53	RD58*1/6
DN40	31	1.5"	24	60	RD65*1/6
DN50	31	2"	24	72	RD78*1/6
DN65	36	2.5"	28	87	RD95*1/6
DN80	42	3"	28	100	RD110*1/4
DN100	50	4"	30	120	RD130*1/4



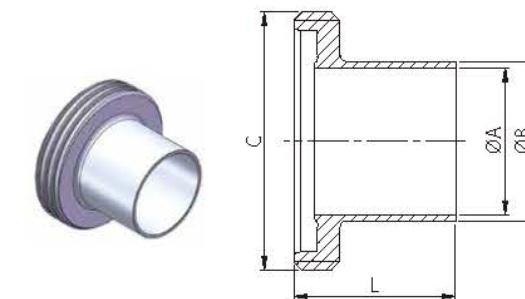
LINER PARTS

DIN	ØA	ØB	L	ISO	ØA	ØB	L	INCH	ØA	ØB	L	ØC
DN10	10	13	39	DN8	10.3	13.5	39	1/2"	9.4	12.7	39	21.9
DN15	16	19	39	DN10	14	17.2	39	3/4"	15.75	19.5	39	27.9
DN20	20	23	38	DN15	18.1	21.3	40	—	—	—	—	35.9
DN25	26	29	40	DN20	23.7	26.9	41	1"	22.1	25.4	40	42.9
DN32	32	35	47	DN25	29.7	33.7	47	—	—	—	—	48.9
DN40	38	41	47	DN32	38.4	42.4	47	1.5"	34.8	38.1	46.5	54.9
DN50	50	53	48	DN40	44.3	48.3	48	2"	47.5	50.8	47.5	66.9
DN65	66	70	61	DN50	56.3	60.3	62	2.5"	60.2	63.5	63	84.9
DN80	81	85	61	DN65	72.1	76.1	61	3"	72.9	76.2	61	98.9
DN100	100	104	66	DN80	84.3	88.9	68	4"	97.38	101.6	65	118.9



SEAL

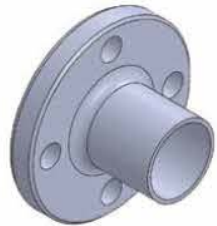
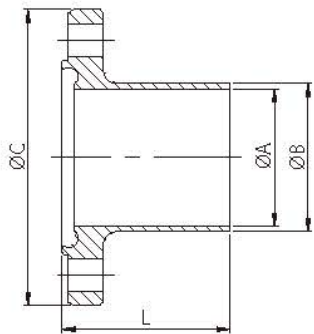
DIN	ØA	ISO	ØA	INCH	ØA	L
DN10	12	DN8	12	1/2"	12	3.5
DN15	18	DN10	16	3/4"	18	3.5
DN20	22	DN15	20	—	—	3.5
DN25	28	DN20	26	1"	24	3.5
DN32	34	DN25	32	—	—	5
DN40	40	DN32	40.5	1.5"	37	5
DN50	52	DN40	46.5	2"	50	5
DN65	68	DN50	58.5	2.5"	62	5
DN80	83	DN65	73.5	3"	75	5
DN100	102	DN80	86.5	4"	100	5



MALE PARTS

DIN	ØA	ØB	L	ISO	ØA	ØB	L	INCH	ØA	ØB	L	C
DN10	10	13	41	DN8	10.3	13.5	41	1/2"	9.4	12.7	41	RD28*1/8
DN15	16	19	41	DN10	14	17.2	41	3/4"	15.75	19.5	41	RD34*1/8
DN20	20	23	43	DN15	18.1	21.3	43	—	—	—	—	RD44*1/6
DN25	26	29	43	DN20	23.7	26.9	43	1"	22.1	25.4	43	RD52*1/6
DN32	32	35	48	DN25	29.7	33.7	48	—	—	—	—	RD58*1/6
DN40	38	41	48	DN32	38.4	42.4	48	1.5"	34.8	38.1	48.5	RD65*1/6
DN50	50	53	48	DN40	44.3	48.3	49	2"	47.5	50.8	48.5	RD78*1/6
DN65	66	70	60	DN50	56.3	60.3	60	2.5"	60.2	63.5	60	RD95*1/6
DN80	81	85	64	DN65	72.1	76.1	64	3"	72.9	76.2	64	RD110*1/4
DN100	100	104	64	DN80	84.3	88.9	64	4"	97.38	101.6	64	RD130*1/4

DIN 11864-2 Unions Form A



DIN Nutflansch (NF)

SIZE	ØA	ØB	ØC	L
DN10	10	13	54	41.5
DN15	16	19	59	41.5
DN20	20	23	64	41.5
DN25	26	29	70	41.5
DN32	32	35	76	46.5
DN40	38	41	82	46.5
DN50	50	53	94	46.5
DN65	66	70	113	55.5
DN80	81	85	133	59.5
DN100	100	104	159	59.5
DN125	125	129	183	61.5
DN150	150	154	213	61.5

IMPERIAL Nutflansch (NF)

SIZE	ØA	ØB	ØC	L
1/2"	9.4	12.7	54	41.5
3/4"	15.75	19.05	59	41.5
1"	22.1	25.4	66	41.5
1.5"	34.8	38.1	79	46.5
2"	47.5	50.8	92	46.5
2.5"	60.2	63.5	107	55.5
3"	72.9	76.2	125	57.5
4"	97.38	101.6	157	59.5

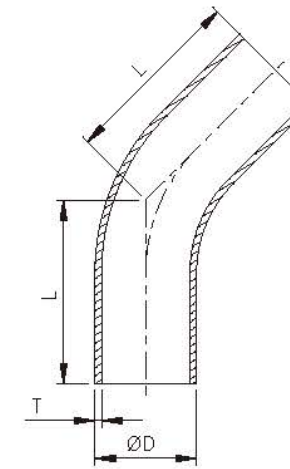
DIN Bundflansch (BF)

SIZE	ØA	ØB	ØC	L
DN10	10	13	54	40
DN15	16	19	59	40
DN20	20	23	64	40
DN25	26	29	70	40
DN32	32	35	76	45
DN40	38	41	82	45
DN50	50	53	94	45
DN65	66	70	113	54
DN80	81	85	133	58
DN100	100	104	159	58
DN125	125	129	183	60
DN150	150	154	213	60

IMPERIAL Bundflansch (BF)

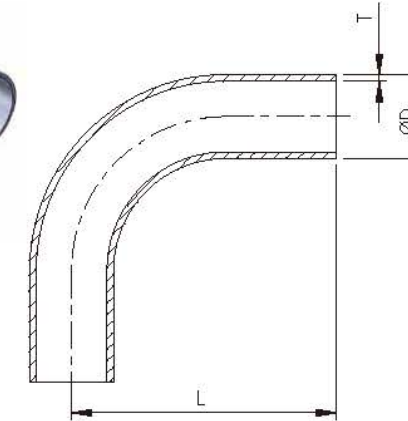
SIZE	ØA	ØB	ØC	L
1/2"	9.4	12.7	54	40
3/4"	15.75	19.05	59	40
1"	22.1	25.4	66	40
1.5"	34.8	38.1	79	45
2"	47.5	50.8	92	45
2.5"	60.2	63.5	107	54
3"	72.9	76.2	125	56
4"	97.38	101.6	157	58

DIN Tubular items (DIN11865)



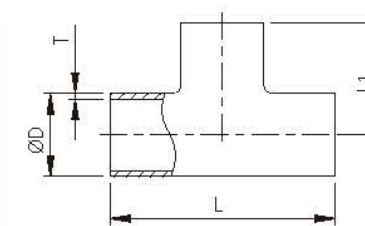
45° LONG ELBOW

SIZE	ØD	L	T
DN6	8	33.3	1.5
DN8	10	35.4	1.5
DN10	13	35.8	1.5
DN15	19	39.5	1.5
DN20	23	41.6	1.5
DN25	29	60.7	1.5
DN32	35	62.8	1.5
DN40	41	64.9	1.5
DN50	53	69	1.5
DN65	70	73.1	2
DN80	85	92.3	2
DN100	104	96.4	2
DN125	129	160.2	2
DN150	154	193.2	2
DN200	204	224.3	2



90° LONG ELBOW

SIZE	ØD	L	T
DN6	8	45	1.5
DN8	10	50	1.5
DN10	13	51	1.5
DN15	19	60	1.5
DN20	23	65	1.5
DN25	29	90	1.5
DN32	35	95	1.5
DN40	41	100	1.5
DN50	53	110	1.5
DN65	70	120	2
DN80	85	145	2
DN100	104	155	2
DN125	129	270	2
DN150	154	325	2
DN200	204	400	2



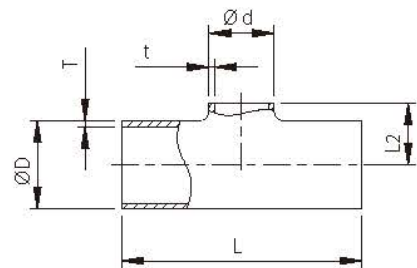
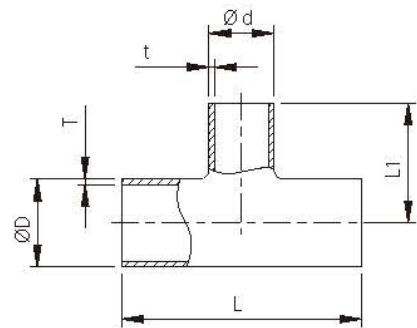
TEE & PULL TEE

SIZE	ØD	L	L1	L2	T
DN6	8	60	30	—	1
DN8	10	60	30	—	1
DN10	13	70	35	—	1.5
DN15	19	70	35	11	1.5
DN20	23	80	40	13	1.5
DN25	29	100	50	16	1.5
DN32	35	110	55	19.5	1.5
DN40	41	120	60	23	1.5
DN50	53	160	80	30	1.5
DN65	70	210	105	40	2
DN80	85	260	130	47.5	2
DN100	104	310	155	58	2
DN125	129	375	187.5	74	2
DN150	154	450	225	90	2
DN200	204	600	300	115	2

DIN Tubular items (DIN11865)

REDUCING TEE & REDUCING PULL TEE

SIZE	ØD	Ød	L	L1	L2	T	t
8*6	10	8	60	30	—	1	1
10*6	13	8	60	30	—	1.5	1
10*8	13	10	60	30	—	1.5	1
15*8	19	10	70	35	11	1.5	1
15*10	19	13	70	35	11	1.5	1.5
20*10	23	13	80	40	13	1.5	1.5
20*15	23	19	80	40	13	1.5	1.5
25*15	29	19	100	50	16	1.5	1.5
25*20	29	23	100	50	16	1.5	1.5
32*15	35	19	110	55	19	1.5	1.5
32*20	35	23	110	55	19	1.5	1.5
32*25	35	29	110	55	19	1.5	1.5
40*20	41	23	120	60	22	1.5	1.5
40*25	41	29	120	60	22	1.5	1.5
40*32	41	35	120	60	22.5	1.5	1.5
50*25	53	29	160	80	28	1.5	1.5
50*32	53	35	160	80	28.5	1.5	1.5
50*40	53	41	160	80	29	1.5	1.5
65*32	70	35	210	80	37	2	1.5
65*40	70	41	210	80	37.5	2	1.5
65*50	70	53	210	80	38	2	1.5
80*40	85	41	260	105	45	2	1.5
80*50	85	53	260	105	46	2	1.5
80*65	85	70	260	105	47.5	2	2
100*50	104	53	310	130	55.5	2	1.5
100*65	104	70	310	130	57	2	2
100*80	104	85	310	130	57	2	2
125*65	129	70	375	155	69.5	2	2
125*80	129	85	375	155	69.5	2	2
125*100	129	104	375	155	70.5	2	2
150*80	154	85	450	187.5	82	2	2
150*100	154	104	450	187.5	83	2	2
150*125	154	129	450	187.5	86.5	2	2
200*100	204	104	600	225	108	2	2
200*125	204	129	600	225	111.5	2	2
200*150	204	154	600	225	115	2	2



DIN Tubular items (DIN11865)

CONCENTRIC REDUCER/ECCENTRIC REDUCER

SIZE	ØD	Ød	L	T	t
8*6	10	8	38	1	1
10*6	13	8	38	1.5	1
10*8	13	10	38	1.5	1
15*8	19	10	60	1.5	1
15*10	19	13	60	1.5	1.5
20*10	23	13	60	1.5	1.5
20*15	23	19	60	1.5	1.5
25*15	29	19	70	1.5	1.5
25*20	29	23	70	1.5	1.5
32*20	35	23	80	1.5	1.5
32*25	35	29	80	1.5	1.5
40*20	41	23	90	1.5	1.5
40*25	41	29	90	1.5	1.5
40*32	41	35	90	1.5	1.5
50*25	53	29	90	1.5	1.5
50*32	53	35	90	1.5	1.5
50*40	53	41	90	1.5	1.5
65*40	70	41	110	2	1.5
65*50	70	53	110	2	1.5
80*50	85	53	110	2	1.5
80*65	85	70	110	2	2
100*65	104	70	135	2	2
100*80	104	85	135	2	2
125*80	129	85	150	2	2
125*100	129	104	150	2	2
150*100	154	104	170	2	2
150*125	154	129	170	2	2
200*125	204	129	230	2	2
200*150	204	154	230	2	2

